USSR

UDC: 8.74

KHVORENKOV, S. G., KUCHMIN, V. M.

"MATMINS Algorithmic Information Model Language"

Uch. zap. Gor'kov. un-t (Scientific Notes. Gor'kiy University), 1972, vyp. 146, pp 79-94 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V612 by V. Ostrovskiy)

Translation: The authors propose an algorithmic language designed for processing economic data. In contrast to COBOL, ALGEM and ALGEC, where the program transcription in the data division contains a comprehensive characteristic of the source and resultant data, there is no data division as such in the MATMINS algorithmic language. The necessary characteristics of all data blocks and documents accessible for use in the program are set up beforehand in machine-oriented form and are continuously present in the system. In this regard, there is no longer any need to describe these data in every problem to be solved. As time passes, the available set of descriptions is periodically revised and enlarged. The proposed algorithmic language is developed in conjunction with other components of the MATMINS enterprise information model, and is intimately

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USSR

KHVORENKOV, S. G., KUCHMIN, V. M., Uch. zap. Gor'kov. un-t, 1972, vyp. 146, pp 79-94

related to them. The MATMINS algorithmic language should be considered as an attempt to create a language for describing data processing algorithms in which an information model performs the functions of the data division. The paper presents a formalized description of the language using metalinguistic formulas. An analysis is made of a detailed example of description of an algorithm for calculating the material requirement for an item in terms of the MATMINS language.

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1/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PHOTOMETRIC DETERMINATION OF NIOBIUM BY MEANS OF 1,2,PYRIDYLAZO,RESORCINOL -U-

AUTHOR-(03)-KUCHMISTAYA, G.I., DOBKINA, B.M., ELINSON, S.Y.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM.; 25: 742-5(APR 1970)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NIOBIUM METAL CHEMICAL ANALYSIS, COMPLEX COMPOUND, METAL PHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0730 STEP NO--UR/0075/70/025/000/0742/0745

CIRC ACCESSION NO--AP0126440

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126440

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX COMPOUND NIOBIUM TARTRATE WITH 1,(2,PYRIDYLAZO) RESORCINOL WAS STUDIED IN A STRONGLY ACID (1 N) SOLUTION. DUE TO THE DIFFERENT IONIC STATES OF THE REAGENT IN A STRONG ACID AND IN A WEAK ACID (PH 5 TO 6) SOLUTION THE NIOBIUM COMPLEX COMPOUNDS FORMED DIFFER IN THEIR MAXIMUM ABSORPTION AND COMPOSITION. A METHOD WAS DEVELOPED FOR DETERMINING MORE THAN 0.01PERCENT OF NIOBIUM IN ORES BY THIS METHOD. FACILITY: STATE SCIENTIFIC RESEARCH AND DESIGN INST. OF RARE METAL INDUSTRY, MOSCOW.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DIFFERENTIAL PHOTOMETRIC METHOD OF DETERMINING TANTALUM IN CONCENTRATES -U-

AUTHOR-(03)-KUCHMISTAYA, G.I., NADEZHDINA, G.V., DOBKINA, B.M.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB., 1970, 36, (3), 275-276

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--TANTALUM, PHOTOMETRIC ANALYSIS, QUANTITATIVE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0917 STEP NO--UR/0032/70/036/003/0275/0276

CIRC ACCESSION NO--AP0131503

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 022

CIRC ACCESSION NO--AP0131503

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DIFFERENTIAL PHOTOCOLORIMETRIC METHOD ORIGINALLY USED FOR DETERMINING 5PERCENT OF TA IN HYDROXIDES IS ADAPTED TO DETERMINING MUCH LARGER QUANTITIES IN INDUSTRIAL CONCENTRATES. THE BASIS OF THE METHOD IS THE EXTRACTION OF A FLUOROTANTALATE METHYL VIOLET COMPLEX WITH BENZENE, MEASURING THE OPTICAL DENSITY OF THE EXTRACTS BY A DIFFERENTIAL PROCEDURE RELATIVE TO A STANDARD SOLUTION. THE EXPECTED ERROR IS 0.5-1PERCENT.

UNCLASSIFIED

USSR UDC 51.330.115

GOLENKO, D. I., KUCHMOV, Yu. M.

"Statistical Model of Functioning of Control System for Reserves"

Tr. Mosk. Ekon.-Statistt. In-ta. Fiz-mat. n. [Works of Moscow Economics-Statistics Institute, Physical and Mathematical Sciences], Part 2, 1970, pp 49-66 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4, V603).

No Abstract.

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USSR

UDC 519.1

KUCHUGANOV, V. N.

"Homomorphism of Image Graphs"

Izhevsk, Avtomat. ustroystva ucheta i kontrolya--Sbornik (Automatic Devices for Recording and Monitoring -- Collection of Works), No 6, 1970, pp 196-208 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V360, by V. Leont'yev)

Translation: The approach of V. S. Fine to recognition of objects by their planar images is extended. Recommendations are given for the breakdown of objects into "corresponding" subregions by which images can be subsequently compared. It is proposed that the planar contour image of an object be described by a graph in which the incidence of its vertices is determined by contiquity in the sense of an ordinary Euclidean metric. Here the problem of identification of the test image with any of the reference images is formulated as a problem of finding the homomorphic image of the graph of this representation among the graphs of reference images. If the set of reference graphs has no graphs that are homomorphic images of the graphs of the test images, then identification is carried out based on the most general homomorphic part of

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KUCHUGANOV, V. N., Izhevsk. Avtomat. ustroystva ucheta i kontrolya--Sbornik, No 6, 1970, pp 196-208

the graph of the test image with the reference graph. Here, functionals characterizing the closeness of the test image to the reference image are introduced to evaluate the size of the common homomorphic part of both graphs. In conclusion, the problem of the most economical form of representing an object given by several planar images in the memory of a recognition device is discussed.

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USSR

UDC 681.3.05:51

KUCHUGANOV, V. N.

"Approximation of Flat Figures with Circles"

Avtomat. Ustroystva Ucheta I Kontrolya, [Automatic Accounting and Control Devices--Collection of Works], No 6, Izhevsk, 1970, pp 186-195, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1970, Abstract No. 5V640 by V. Mikheyev).

Translation: A method of approximate representation of flat figures is presented, consisting of their approximation by circles of various diameters, and an algorithm for a program for a universal computer automatically performing this approximation is described.

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USSR

UDC51:155.001.57:681.3.06

ZLATKIS, V. M., KAZAKOV, V. S., KUCHUGANOV, V. N., LOSEV, I. R., MOCHENOV, S. V.

"Image Input-Output Device for Minsk-1 Computer"

Avtomat. Ustroystva Ucheta I Kontrolya, [Automatic Accounting and Control Devices--Collection of Works], No 6, Izhevsk, 1970, pp 164-174, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V682).

Translation: Problems are studied of creating and operating image input-output devices for small computers. The device is based on the FTA-PM phototelegraph apparatus with slight modifications and practically no modifications to the Minsk-1 computer. The input of an image is performed from a sheet 220 mm in width with unlimited length, and the output in onto electrochemical paper. The resolving capacity of the apparatus is 3-4 lines per mm, the operating speed is 120 lines per minute. Operation is performed at a carrier frequency of 1,900 Hz. Input and output of the image is performed by sectors 64 x 7 mm or 128 x 14 mm in size with resolution into 250 x 31 elements, with brightness quantized to [single-digit number eligible--Er] levels. A block diagram and functional diagram of the device are presented and the operation of the individual units is described. It is noted that this device has been used for successful operation of algorithms for recognition of printed characteristics, algorithms for classification of complex images according to their skeletal outline have been studied, a method of probabilistic coding of halftone images has been tested and experiments have been performed on the separation of con-

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USSR UDC 51:155.001.57:681.3.06

ZLATKIS, V. M., KAZAKOV, V. S., KUCHUGANOV, V. N., LOSEV, I. R., MOCHENOV, S. V.,
Avtomat. Ustroystva Ucheta I Kontrolya, No 6, Izhevsk, 1970, pp 164-174.

tours of images from photographic portraits of people.

1/2 034 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE INFLUENCE OF IPRAZID ON THE LIPID METABOLIC RATE IN HEALTHY RABBITS AND IN RABBITS WITH EXPERIMENTAL ATHEROSCLEROSIS IN FLAT AND
AUTHOR--KUCHUK, E.M., KOPYTIN, B.M.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3, PP 76-78
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIPID METABOLISM, RABBIT, ATHEROSCLEROSIS, BLOOD PLASMA, LIVER, HEART, CHOLESTEROL, BILIRUBIN, PSYCHOPHARMACOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/0839 STEP NO--UR/0219/70/069/003/0076/0078

CIRC ACCESSION NO--AP0052273
UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0052273

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 30 DAY LONG COURSE OF IPRAZID ADMINISTRATION (2 MG-KG) HAD LITTLE EFFECT ON LIPIDS OF THE BLOOD PLASMA, LIVER AND AORTA OF HEALTHY RABBITS, BUT IN RABBITS WHICH RECEIVED CHOLESTEROL FOR 75 DAYS IT LOWERED SIGNIFICANTLY THE CONCENTRATION OF CHOLESTEROL AND TOTAL LIPIDS IN THE ABOVE CITED TISSUES AND ALSO ALLEVIATED AORTIC ATHEROSCLEROSIS BOTH IN FLAT AND ALPINE COUNTRY. IPRAZID TENDED TO RAISE THE LEVEL OF NON ETHERIFIED FATTY ACIDS IN THE BLOOD PLASMA AND IN 4 OUT OF 27 RABBITS WITH ATHEROSCLEROSIS IT CAUSED HYPERBILIRUBINEMIA.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MULTIPARAMETER AUTONOMOUS EEG ANALYZER FOR OPERATIVE TESTING OF THE FUNCTIONAL STATE OF A HUMAN OPERATOR -U-

AUTHOR-(05)-ATABEKYANTS, A.I., AKHUTIN, V.M., BUNDZEN, P.V., KUCHUK, G.A., NEROSLAVSKIY, I.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKII ZHURNAL SSSR, VOL. 56, MAR. 1970, P 443-446

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL APPARATUS, ELECTROENCEPHALOGRAPHY, BRAIN, BIOPOTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0676 STEP NO--UR/0239/70/056/000/0443/0446

CIRC ACCESSION NO--AP0117901

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BRIEF DESCRIPTION OF A PORTABLE AUTONOMOUS COMPLEX EEG ANALYZER WHICH MAKES IT POSSIBLE TO PERFORM CONTINUOUS PROCESSING OF BRAIN BIOPOTENTIALS WITH RESPECT TO A NUMBER OF AMPLITUDE, PHASE, AND FREQUENCY PARAMETERS. THE DEVICE CONSISTS OF THREE PAIRED FREQUENCY FILTERS, THREE CHANNELS FOR MEASURING PHASE SHIFTS BETWEEN ANY TWO EEG LEADS, AND A CHANNEL FOR ANALYZING THE OSCILLATION FREQUENCY OF THE ENVELOPE OF THE MAIN RHYTHM. THE DEVICE IS DISTINGUISHED BY THE POSSIBLITY OF PERFORMING CONTINUOUS COMPLEX MEASUREMENTS OF BIOELECTRIC ACTIVITY WITHOUT THE USE OF EXPENSIVE COMPUTER HARDWARE AND WITHOUT REQUIREING THE PARTICIPATION OF HIGHLY QUALIFIED ENGINEERING PERSONNEL IN THE EXPERIMENTS. FACILITY: AKADEMIIA MEDITSINSKIKH NAUK SSR SEVERO ZAPADNYI ZAOCHNYI POLITEKHNICHESKII INSTITUT, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 577.4

GOLENKO, D. I., DANELIN, A. I., KUCHUMOV, YU. M.

"Definition of the Optimal Policy of Filling an Order with a Random Nonstationary Demand in the Material and Technical Supply System"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Economic Engineering Institute), 1972, vyp. 91, pp 155-163a (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V535)

No abstract

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SYNTHESIS AND SOME PROPERTIES OF K SUB4 YH(HPO SUB4) SUB2 NEGATIVE (C SUB2 O SUB4) SUB2 .6H SUB2 O -U-

AUTHOR-(03)-MOLODKIN, A.K., BALAKAYEVA, T.A., KUCHUMOVA, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1152-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ABSORPTION BAND, CHEMICAL SYNTHESIS, POTASSIUM COMPOUND, PHOSPHOROUS COMPOUND, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1085 STEP NO--UR/0078/70/015/004/1152/1153

CIRC ACCESSION NO--AP0123078

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123078

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN K SUB3 PO SUB4 .7H SUB2 O WAS ADDED TO AN AQ. SOLN. OF K SUB4 TH(C SUB2 O SUB4) SUB4 FINE CRYST. K SUB4 TH(HPO SUB4) SUB2 (C SUB2 O SUB4) SUB2 .6H SUB2 O (I) SEPD., WITH N GAMMA 1.537 AND N ALPHA 1.525. ON HEATING, I LOST H SUB2 O AT SIMILAR 170DEGREES AND THEN H SUB2 O AND CO AT SIMILAR TO 170-400DEGREES TO GIVE TH(HPO SUB4) SUB2 AND K SUB2 CO SUB3. I HAS BIDENTATE C SUB2 O SUB4 PRIME2 NEGATIVE GROUPS AND ITS IR SPECTRUM SHOWS A SPLIT PO SUB4 PRIME3 NEGATIVE ABSOROTION BAND AT 900-1100 CM PRIME NEGATIVE1.

FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--LATTICE DYNAMICS AND FOURIER COMPONENTS OF THE INERTIA FREE DIELECTRIC CONSTANT OF A SODIUM IODIDE CRYSTAL -U-

AUTHOR-(02)-KUCKER, I.I., TOMASEVICH, O.F.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2) 553-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SODIUM COMPOUND, IODIDE, FOURIER ANALYSIS, CRYSTAL LATTICS, DIELECTRIC CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0141 STEP NO--UR/0181/70/012/002/0553/0556

CIRC ACCESSION NO--AP0054937

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054937

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FREQUENCY AND AMPLITUDE OF THE NORMAL LATTICE VIBRATIONS OF NACL WERE CALCD. BY USING THE POLARIZING ION APPROXN. TAKING INTO ACCOUNT THE 2ND NEIGHBOR INTERACTION. DISPERSION CURVES IN SYM. K LEADS TO SPACE DIRECTIONS, THE DEBYE TEMP., AND THE FOURIER COMPONENTS EPSILON(K) LEADS TO OF THE INERTIA FREE DIELEC. CONST. ARE GIVEN. CALCD. AND EXPTL. RESULTS ARE IN AGREEMENT.

UNCLASSIFIED

USSR

UDC 621.317.757:621.391.822

KUDABA, V. YE., PALENSKIS, V. I., KALITIS, R. I., BRAZDZHYUNAS, P. P.

"Spectral Analysis of Current Noise"

Liet. fiz. rinkinys, Lit. fiz. sb. (Lithuanian Physics Collection), 1970, Vol 10, No 4, pp 593-607 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A275)

Translation: A device for spectral analysis of current noise in the 0.01 Hertz to 10 megahertz range is described. The correlation method of analysis on a computer is used in the infralow frequency range (0.01-1 Hertz). The errors in calculating the correlation function and spectral density as a function of the length of the realization were estimated. Low-noise high-frequency and low-frequency preamplifiers have been developed. A cascade cathode repeater was used at high frequencies to amplify the total input impedance. Stable narrow band amplifiers of the RC and LC type were developed. There are 10 illustrations and a 9-entry bibliography.

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UDC 621.385.623.5.01

USSR

KULAKOV, A.V., KUDAKTIN, V.V.

"Quasi-Static Characteristics Of Two-Speed Electron Stream In Retarding Electrical Field"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, pp 52-61 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A144)

Translation: A theoretical method is developed for investigation of the quasi-static characteristics of a two-speed electron stream in a retarding electrical field. An analysis is presented of the effect of change of the density of the secondary emission current and the velocity of the electrons at the time of transit of the electrons of the primary current in the reflecting space. A discussion of the results obtained and a comparison of them with those known earlier is conducted. 4 ref. Summary.

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USSR

UDC 537.533:54

BOGACHEV, I. N., KIDARAUSKAS, I. A., and KUZNETSOV, V. C., Ural Polytechnical Institute imeni C. M. Kirov, Sverdlovsk

"Effect of Adsorption on Kinetics of the Exoelectronic Emission"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 6, Jun 73, pp 1578-1579

Abstract: Exoemission of tin and zinc subjected to deformation by tension and rupture under vacuum (up to $2 \cdot 10^{-6}$ torr) was studied. The emission was stimulated by α mercury lamp, the rate of deformation was $4.24 \cdot 10^{-4}$ sec^{-1}. The experiment was based on the cyclic increase of pressure in vacuum from $2 \cdot 10^{-6}$ to $5 \cdot 10^{-4}$ torr. After rupturing the tin samples at $5 \cdot 10^{-4}$ torr some increase in emission was observed, followed by a gradual decrease in the emission intensity. When the vacuum was increased twofold, the emission at first decreased, then reached a maximum and decreased again. Similar phenomena were observed in the case of zinc, but decreases and increases were of much high magnitude. This behavior of emission is attributed to adsorption processes. Filling the vacuum chamber with air to $5 \cdot 10^{-4}$ torr pressure facilitated the adsorption process and it was accompanied by an intensive exoemission. If samples were held at this pressure for ~ 1 min., several increases and decreases in the exoemission were observed. However, during

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USSR

BOGACHEV, I. N., et al., Zhurnal Fizicheskoy Khimii, Vol 47, No 6, Jun 73, pp 1578-1579

the second increase in pressure, the kinetics of exoemission was not influenced much in the case of zinc but facilitated a more rapid decrease of the exoemission for tin. This indicated the irreversible nature of the emission process.

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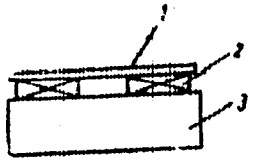
AA0044748 KUDASHEV N.V. UR 0482 4

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

243974 RECEIVER FOR ACOUSTIC SIGNALS. When an acoustic signal is applied to the diaphragm (1), eddy currents are generated in it. Their interaction with the magnet (3) magnetic field generates an e.m.f. in the coil (2). As the diaphragm mass is small, the receiver reproduces without distortion the shape of the applied signal within a wide frequency range.



20.10.67 as 1191772/18-10. BAKSHEEV A.F. et alia. KUIBYSHEV PETROLEUM IND.RES.INST.(3.10.69) Bul 17/ 14.5.69. Class 42s. Int.Cl.B 06b.

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19771511

AA0044748

AUTHORS: Bashkeyev, A. F., Yerusalimskiy, I. N., Kalinkin, G. N., Kudashev, N. V., Laptev, V. V., Sakharov, Yu. I., Fedoseyev, A. N., Tsiyv, L. Z.

Kuybyshevskiy Nauchno-Issledovatel'skiy Institut Neftyanoy Promyshlennosti

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19771512

USSR

UDC: 531.787.3

KUDASHEV, Ye. B., VEREB'YEVSKIY, I. D.

"A Method of Graduating Converters of Turbulent Pressure Pulsations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329427, Division G, filed 16 Feb 70, published 9 Feb 72, p 166

Translation: This Author's Certificate introduces a method of graduating converters of turbulent pressure pulsations by placing a reference converter and the converter to be graduated at the same distance from a point of the pressure field, measuring the voltages of the reference converter and the converter to be graduated on a predetermined frequency, and calculating the sensitivity of the converter to be graduated. As a distinguishing feature of the patent, precision is improved by placing the reference converter and the converter to be graduated alternately in the same position on a surface in a streamline flow, producing a turbulent flow of identical velocity, determining the spectral density of the pressure pulsations with the reference converter, and graduating the other converter by determining its sensitivity from the ratio of its electric signal to the spectral density of the pressure pulsations throughout the range of working frequencies.

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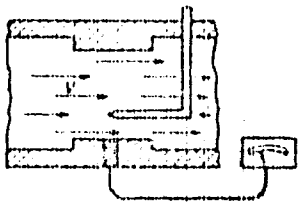
USSR

KUDASHEV, Ye. B., VEREB'YEVSKIY, I. D., USSR Author's Certificate No 309407



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USSR

UDC 615.9:612.014.482

KUDASHEVA, N. P.

"Alterations in the Blood System of Dogs in the Case of Am^{241} Inhalation Affection"

V sb. Biol. deystviye vneshnikh i vnutren. istochnikov radiatsii (Biological Effect of External and Internal Radiation Sources), Moscow, Meditsina, 1972, pp 312-315 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.1113)

Translation: In dogs subjected to a single inhalation effect of Am^{241} nitrate (pH 1.5-2.0), the deposition of Am^{241} in the lungs amounted to 1-2 μ curies (first group), 4 μ curies (second group), 5-7 μ curies (third group) and 8-10 μ curies (fourth group). A study of the peripheral blood for 12 months demonstrated that against the background of absence of variations in the number of erythrocytes, reiculocytes and Hb, the total number of leucocytes dropped (basically as a result of the neutrophils). The greatest alterations were detected in the fourth group where the number of leucocytes dropped to 400 cells per mm^3, and the number of thrombocytes dropped. In the bone marrow of the dogs in the second,

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KUDASHEVA, N. P., Biol. deystviye vneshnikh i vnutren. istochnikov radiatsii, 1972, pp 312-315

third and fourth groups, a reduction in the absolute number of myelokaryocytes was noted. In all groups, an increase in the mytotic activity of the cells of the red series was observed. Histologically, for two dogs which died in 116-414 days, pneumonia and pneumosclerosis with hypoplasia of the bone marrow were detected.

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UDC [illegible]

KUDASHKIN, V. V., YELISEYEV, V. S., and POSYAGIN, I. Ye., Kuznetsk Metallurgical Combine

"Effect of Various Deoxidation Methods on the Quality of Steel and Expenditure of Deoxidizers"

Moscow, Metallurg, No 9, Sep 70, pp 19-21

Abstract: The Kuznetsk Metallurgical Combine has been using various methods of deoxidizing steel. Most steels have been deoxidized in the ladle. Until 1965, the deoxidizers were either ferromanganese alone or ferromanganese with 10-18% ferrosilicon or Simn 17 silicomanganese. This paper attempts to describe a more economic method which has recently been introduced at the combine. Slagging begins after 15-25 minutes and is terminated 20-30 minutes prior to deoxidation. In the process attempts are made to remove most of the slag. This makes it possible to reduce the loss of manganese and correct by 20-40%, depending on the steel grade, and silicon up to 20%. Ferro-[illegible]-ferrosilicon is substituted for the 18-20%, reducing the expenditure of [illegible] alloy to one-fifth or one-[illegible], deoxidation time by 10-11 minutes, and the general deoxidation cost of steel by 20-40 kopecks. Steel has also been deoxidized in

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USSR

KUDASHKIN, V. V., et al, Metallurg, No 9, Sep 70, pp 19-21

the furnace with the use of 45%-ferrosilicon, and in the [illegible] silicomanganese. The addition of the latter in the ladle reduced [illegible] of manganese from 12 to 9%, decreased deoxidation time by 5 minutes, and cut the expenditure of ferroalloys from 14.7 to 13.1 kg/ton of steel. [illegible] of the mechanical properties of the rolled product from both experimental and ordinary melts failed to show any significant differences between them; in both cases the mechanical characteristics exceeded GOST requirements. As for the contamination of the steel with nonmetallic inclusions, the amount of the latter was the same in both steels.

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USSR UDC: 621.384.83

GERASIMOV, A. I., DUBINOV, Ye. G., and KUDASOV, B. G.

"Spectrometer of Electron Pulse Beams"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 31-34

Abstract: An instrument which records the spectra of accelerated electrons in the course of about 40 seconds and measures their maximum energy is described. The error in determining the latter is a function of the spectrometer resolving power and the accuracy with which the magnetic field is measured; in this instrument, it did not exceed 2.5% with an average magnetic field of 835 oersteds and an energy level of 2 Mev. The measurement error of the continuous spectrum in the range of 0.6-2 Mev, without such singularities as sharp peaks or drops, was about 10%. Operating on the principle of the magnetic spectrometer, the device is said to be stable, easy to operate, and simple in construction and repair. Drawings are given of the instrument's basic structure, the construction of the magnet, and the schematic of the electrometric amplifier. Oscillograms of the signals output from the beam sensors for various modes of operation are given.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--AGE OF GOLD MINERALIZATION IN THE AKVEIT DEPOSIT NORTHERN KAZAKHSTAN -U-

AUTHOR-(02)-KUDAYBERGENOVA, N.K., IVANOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--VESTN. AKAD. NAUK KAZ. SSR 1969, 26(2), 64-5

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--GOLD, GEOLOGIC FORMATION, GEOGRAPHIC LOCATION, ORE, ARGON, SODIUM, POTASSIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0122 STEP NO--UR/0031/70/026/002/0064/0065

CIRC ACCESSION NO--AP0054918

UNCLASSIFIED

CIRC ACCESSION NO--AP0054918

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYDROTHERMALLY ALTERED ROCKS, RELATED DIRECTLY TO MINERALIZATION, WERE USED IN DETN. OF ABS. AGE OF AU MINERALIZATION IN THE DEPOSIT. THE NEAR ORE ALTERED ROCKS HAVE A ZONAL STRUCTURE. EACH ZONE REPRESENTED A DEFINITE DEGREE OF REPLACEMENT OF WALL ROCKS THE INTENSITY OF WHICH INCREASED FROM UNALTERED ROCKS IN DIRECTION TO FRACTURES WHICH PROVIDED FOR CIRCULATION OF HYDROTHERMAL SOLNS. THE ROCKS FROM THE ZONE OF BERESITIZED ROCKS (0.1-0.5 M), DEVELOPED AFTER DIORITE AND SYENITE PORPHYRY, WAS USED FOR DETN. OF THE AGE BECAUSE IT CONTACTS DIRECTLY THE ORE BODY. THE ZONE CONSISTED OF SERICITE 60-80, QUARTZITE 5-15, CALCITE 0-10, PYRITE 0-5PERCENT, AND FEW GRAINS OF ALBITE, RUTILE, LEUCOXENE, AND APATITE. THE SERICITES WERE SELECTED FOR DETN. OF ABS. AGE BECAUSE THEY WERE NOT SUBJECTED TO SUPERGENE ALTERATIONS (HYDRATION, DEHYDRATION, AND LOW TEMP. NA METASOMATISM) WHICH OCCURRED IN THE DEPOSIT AND AFFECTED THE K-AR RATIO IN MICAS. THE K-AR DATING OF SERICITES INDICATED THAT ORE BODIES IN THE AKVEIT DEPOSIT WERE FORMED 406-414 MILLION YR AGO.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620008-0"

USSR UDC 632.95.028

VASIL'YEV, V. P., KOSMATYY, Ye. S., KUDEL', K. A., POLOMSKAYA, F. I., and ZATSERKOVSKIY, V. A., Ukrainian Scientific Research Institute of Plant Protection

"Heptachlor Residues in Plants and Soil in Relation to the Application Method"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 3, 1972, pp 32-34

Abstract: No residue of heptachlor was found in the harvest of corn, wheat, or sugar beets, regardless of the method of application: pretreatment of the seeds, soil treatment, or spraying of the young plants. Depending on the method of application heptachlor residue was found for varying periods in the leaves and roots of the plants, but cleared rapidly and did not accumulate in soil.

UDC 616.981.718-078.7

USSR

KAMBARATOV, P. I., KUDELINA, R. I., and ARTISHCHEVA, L. I., Orenburg Medical Institute, Orenburg; Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow; and Orenburg Oblast' Sanitary Epidemiological Station

"Use of a Soluble Rickettsia burneti Antigen as Allergen for the Diagnosis of Fresh Cases of Q-Fever in Man"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp17-18

Abstract: It was reported in a preceding paper that soluble antigen prepared according to Boivin from Rickettsia burneti, phase I, can be used for the retrospective diagnosis of Q-fever in human beings. In the present study this antigen in an amount of 0.1 ml was used in tests on 32 Q-fever patients on the 5th to 24th day of the disease. Beginning with the 5th day of the disease, an allergic reaction was observed upon intracutaneous application of the antigen, that generally reached a maximum 24 hrs after application and subsided within 48 hrs. The antigen did not cause allergic reactions in control patients with other diseases, not did it cause formation of complement-fixing antibodies. The antigen can be recommended for the diagnosis of recent cases of Q-fever.

1/1

USSR UDC 615.373.39:576.851.71.097.3

[illegible], R. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Immunological Characteristics of a Soluble Rickettsia burneti Antigen"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 1, 1970, pp 84-88

Abstract: A soluble antigen obtained from phase I Rickettsia burneti by trichloroacetic acid treatment produced [illegible] in guinea pigs. A double inoculation (48 SU/ml) stimulated antibody formation to phase I and phase II antigens and granted resistance to infection with 10,000 ID of R. burneti. The immunogenic activity of the soluble antigen, as determined from the level of complement-fixing antibodies, was 10-20 times weaker than that of corpuscular antigens. The soluble antigen was equivalent to the phase I corpuscular antigen with respect to resistance to infection with 10,000 ID of R. burneti, and superior to phase II antigen. Simultaneous inoculation of the soluble and corpuscular phase I antigens produced a much higher antibody level than did inoculation of corpuscular 1/.

USSR

[illegible], R. I., et al., Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 1, 1973, pp 91-96

antigen alone. On the other hand, simultaneous inoculation of the soluble and corpuscular phase II antigen produced lower antibody titers than did inoculation of corpuscular antigen alone.

2/2

Acc. Nr: AP0036823 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 84-89

IMMUNOLOGICAL CHARACTERISTICS OF A SOLUBLE RICKETTSIA BURNETI ANTIGEN

R. I. Kudelina

Experiments were performed on guinea pigs. A study was made of immunogenic properties of a soluble antigen of Rickettsia burneti, obtained by Boivin and Mesrobeanu's method. Immunogenicity of the soluble antigen (with consideration to the antigenic activity in the complement fixation reaction, by the content of BU/ml) proved to be 10 to 20 times weaker than the immunogenicity of corpuscular antigens. Double immunization with a soluble antigen (48 BU/ml) stimulated the appearance of antibodies to both phasic components and also resistance to infection with 10,000 ID of Rickettsia burneti, phase I. Simultaneous administration of soluble and corpuscular antigen, phase I provided a considerably higher level of antibodies in comparison with the antibody level produced by administration of corpuscular antigen, phase I, alone. As to administration of soluble antigen together with corpuscular antigen, phase II, it provided a lower level of antibodies in comparison with that following administration of corpuscular antigen, phase II, alone.

D.N.

6

Acc. Nr: AP0036831 K Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 133 -137

A STUDY OF THE ANTIGENIC STRUCTURE OF RICKETTSIA BURNETI, PHASES I AND II, BY THE METHOD OF ELECTRON MICROSCOPIC IMMUNOCYTOCHEMISTRY

A. A. Avakyan, S. M. Kulagin, R. I. Kudelina, S. A. Gulyevskaya, V. M. Rusmarev

The authors carried out investigations for localization of the antigens in Rickettsia burneti, phases I and II, with the aid of ferritin-labeled gamma-globulins obtained from the «early» and «late» sera. There were revealed differences in the character of adsorption of immune gamma-globulins pointing to superficial and deep localization of antigenic substances of phases I and II. In rickettsia of phase II there was noted the presence of two antigenic determinants which reacted with both phasic components.

D.N.

1/ 6

USSR

UDC 669.017:539.16.04

ABRAMOV, O. V., DMITRIYEV, N. N., KUDEL'KIN, V. P., LAKTIONOV, V. S., and MILENIN, Ye. N., Moscow

"Ultrasonic Treatment of High-Heat-Resistance Nickel Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 67-72

Abstract: The steels Kh20N80, EI437B, EP109, and EP220 were ultrasonically treated in the process of vacuum arc remelting, in order to improve their qualities by size reduction of macro-and micro-grains and removal of the zone of acicular crystals. The change of the ingot structure resulted in a considerable increase of plasticity properties of the cast material in the interval of hot deformation temperatures. The surface of bars obtained from ultrasonically treated ingots shows a considerably higher quality than the surface of bars from control ingots. The impact toughness of the rolled iron, obtained from ultrasonically treated alloys EP109 and EP220, increased in the interval of deformation temperatures by approximately two times in comparison with control ingots. Three figures, one table, four bibliographic references.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE GEOCHEMISTRY, FORMATION AND PREVALENCE OF IODO BROMINE WATER
-U-
AUTHOR-(02)-KUDELSKIY, A.V., KOZLOV, M.F.

COUNTRY OF INFO--USSR

SOURCE--(GEOKHIMIYA, FORMIROVANIYE I RASPROSTRANENIYE YODO-BROMNYKH VOD)
MINSK. NAUKA I TEKHNIKA. 1970, 142 PP.
DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOCHEMISTRY, BROMINE, MONOGRAPH, BIBLIOGRAPHY, IODINE, UNDERGROUND WATER, HYDROSPHERE, HYDROLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0308 STEP NO--UR/0000/70/000/000/0001/0142

CIRC ACCESSION NO--AM0116002
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0116002

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. CHAPTER I THE HISTORY OF THE STUDY OF IODO BROMINE WATER 5. II SOME INFORMATION ON THE GEOCHEMISTRY AND PREVALENCE OF IODINE AND BROMINE IN THE EARTH'S CRUST AND IN THE HYDROSPHERE 8. III THE CIRCULATION OF IODINE AND BROMINE AND THE SOURCES OF THEIR ENTERING SUBTERRAINIAN WATERS 13. IV IODINE AND BROMINE IN SUBTERRAINIAN WATERS OF PETROLEUM GAS BEARING BASINS 19. V THE CHEMICAL COMPOSITION OF IODO BROMINE WATERS. WATERS OF SPECIFIC COMPOSITION 82. VI THE INFLUENCE OF GEOLOGO STRUCTURAL CONDITIONS ON THE PROPAGATION OF IODO BROMINE WATERS 95. VII SOME CHARACTERISTICS OF THE FORMATION OF SITES OF IODO BROMINE WATERS 101. VIII IODINE AND BROMINE IN CONNECTION WITH AN EVALUATION OF PERSPECTIVES FOR PETROLEUM GAS BEARING CAPACITY 127. CONCLUSION 131. LITERATURE 134. EXAMINED IS ONE OF THE URGENT PROBLEMS IN MODERN HYDROGEOLOGY AND HYDROCHEMISTRY, THE FORMATION OF IODO BROMINE WATERS. CITED IS A GREAT DEAL OF MATERIAL ON THE CHEMICAL COMPOSITION OF SUBTERRAINIAN WATERS IN THE VARIOUS REGIONS OF THE USSR; FOR THE FIRST TIME ARE DESCRIBED WATERS WITH A UNIQUE CONTENT OF IODINE DISCOVERED IN RECENT YEARS.

UNCLASSIFIED

UDC: 551.46.083:621.317.444

USSR

KUDELYA, L. A.

"Low-Temperature Fluids with High Nuclear Magnetic Susceptibility at Temperatures around 100° K"

Mor. Gidrofiz. Issled. [Marine Hydrophysics Studies -- Collection of Works], No 1(57), Sevastopol', 1972, pp 131-138 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 4, 1973, Abstract No 4.32.1337).

Translation: The increase in the signal/noise ratio for a cryogenic nuclear-precession magnetometer sensor due to the use of low-temperature fluids with high nuclear magnetic susceptibility at temperatures around 100° K is estimated in comparison with sensors using water protons at 300° K. The increase in signal/noise ratio due to the decreased noise level resulting from cooling of the receiving winding of the sensor which senses free nuclear precession signals to the liquid nitrogen temperature 77° K is taken into consideration. Possible applications of cryogenic sensors in nuclear precession magnetometers for marine studies are indicated.

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UDC: 536.24:536.42

USSR

BUTUZOV, A. I., FAYNZIL'BERG, S. N., BEZRODNYY, M. K., USENKO, V. I., KUDELYA, P. P.

"On the Problem of Studying Heat Exchange During Boiling of Liquids Under Inertial Loading Conditions"

Teplofiz. i teplotekhnika. Resp. mezhved. sb. (Thermal Physics and Heat Engineering. Republic Interdepartmental Collection), 1970, Vol 16, pp 137-140 (from Mekh-Mekhanika, No 9, Sep 70, Abstract No 9B869)

Translation: Experiments are conducted on determining the laws of heat exchange which accompany boiling of freon-12 and water on heating surfaces with thermal loads $q = (6.6\text{-}200)$ kW/m^2, and with inertial overloads $a/g = 1\text{-}5250$. Three typical heat exchange regions are distinguished: well developed boiling when $q \geq q_{fc} + q_{ub}$, undeveloped boiling -- $q_{fc} < q < q + q_{ub}$, and a heat exchange region with free convection -- $q < q_{fc}$. The thermal loads q_{fc} and q_{ub} are given in the form of power functions of the inertial overloads and the kind of liquid. In addition, q_{fc} depends on the thickness of the liquid layer on the heat exchange surface. For the heat exchange region with free convection, the authors recommend the usual form of dimensionless relationship with substitution of inertial acceleration a for acceleration due to

USSR

BUTUZOV, A. I., et al, Teplofiz. i teplotekhnika, Resp. mezhved. sb., 1970, Vol 16, pp 137-140 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B869)

gravity g. In the region of well developed boiling, the conventional form of relationship between the coefficient of heat exchange α and heat flux $q_b = q - q_{fc}$. The effect of inertial overloading is accounted for in the parameter q_{fc}. In the region of undeveloped boiling, they propose a relationship of the form $\alpha = c q^n (a/g)^m$, where c, m and n are constants. The results of the experiments agree with the data of McAdams, Mert and Clark. A description is given of the construction of an installation with closed circulation of the cooling agent in the rotor sections of a model; this installation can be used to conduct experiments at heat fluxes of up to 10 MW/m^2. Yu. Ye. Pokhvalov.

2/2

Acc. Nr.: AT0046706 K Ref. Code: UR0146

UDC 681.128.5

USSR

BUTUZOV, A.I., BEZRODNYY, M.K., FAYNZIL' BERG, S.N., KUDELYA, P.P., USENKO, V.I.

"Thermistor Compensated Quantity Gage"

Termorezistornyy kompensirovannyy urovnemer (cf. English above), Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy. Priborostroyeniye, 1970, No 1, pp 123-126

Translation:

The design is considered of a thermistor quantity gage with compensation for the errors associated with the variation of the parameters of the ambient medium.

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Reel/Frame
19790009

USSR

UDC 632.95.028

BURYY, V. S., GOSHKA, A. T., KUDEVICH, S. N., SANNIKOV, G. P., and GUBAREVA, K. P., All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastic Masses, and Northern Scientific Research Institute of the Hydrotechnology and Development

"Residues of Herbicides Used in Clearance of Canals Found in Outside Environment"

Moscow, Khimiya, s Sel'skom Khozyaystve, Vol 10, No 9 (119), 1973, pp 48-54

Abstract: Canal characteristics are reported and the effectiveness of granulated herbicides monuron, diuron, and symazine against water plants. The residue of these preparations was studied in water and in soil at various distances from the site of introduction, as well as in plants and fish. It has been established that monuron is the most promising herbicide for the utilization in the zone of non-black soil considering the aspects of the sanitation-hygienic evaluation and the phytotoxic properties.

1/1

Agriculture

UDC 575.23:581.951.4:517

USSR

KUDIN, A. N., SHKVARNIKOV, P. K. and MAR'YUSHKIN, V. F., Department of Experimental Mutagenesis, Institute of Molecular Biology and Genetics, Ukrainian SSR Academy of Sciences, Kiev

"The Induced Variability of Quantitative Characteristics in Wheat"

Kiev, Tsitologiya i Genetika, Vol 7, No 6, Nov/Dec 73, pp 518-522

Abstract: The progeny of an erectoid mutant of bread spring wheat obtained by gamma irradiation of the Novosibirsk-7 type were studied. For 40 of the best lines obtained data are presented on length of the vegetative period, productivity, quantity and quality of gluten and protein and the weight of 1000 grains. These data are said to show an increased heterogeneity of the population compared to starting material, indicating that the macromutation was accompanied by mutations of the various factors of the polygenous system controlling these quantitative characteristics. Several of the lines were superior to the starting material or the parent generation in one or more of the characteristics, indicating the usefulness of this approach in hybridization.

1/1

I. Probability Theory and Mathematical Statistics
A. Probability Theory

USSR

KUDINA, L. S.

"The Closure of a Set of Indecomposable Distributions with Fixed Specturm"

Teoriya Funktsiy, Funkts. Analiz i Ikh Pril. Resp. Mezhved. Temat. Nauch. Sb. [The Theory of Functions, Functional Analysis and Their Applications. Republic Interdepartmental Thematic Scientific Collection], 1973, No 17, pp 51-56 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V16)

Translation: A continuation of a work by the author (RZhMat, 1973, 4V21). This article presents and proves the theorem: Suppose A is a non-empty closed set in R^n; if A is limited, we suppose additionally that it is not even. Then, the set of indecomposable rules, the spectrum of which corresponds with A, is compact in the sense of weak convergence in the set of all rules the spectrum of which corresponds with A. Author's view

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USSR

KUDINA, L. S.

"Unresolvable Rules with Predetermined Spectrum"

Teoriya Funktsiy, Funkts. Analiz i Ikh Pril. Resp. Mezhved. Nauch. Sb. [Threory of Functions, Functional Analysis and their Applications. Republic Interdepartmental Scientific Collection], 1972, No 16, pp 206-212 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V21, by the author).

Translation: Suppose $P = P(E)$ is a probability rule in R^n. The spectrum of the rule is the set

$$S(P) = \{x : x \in R^n,\ P(V_\varepsilon(x)) > 0,\ \forall \varepsilon > 0\},$$

where $V_\varepsilon(x)$ is a sphere of radius ε with its center at point x. Rule P is called unresolvable if the representation $P = P_1 * P_2$, where P_1 and P_2 are rules, indicates that either $S(P_1)$ or $S(P_2)$ consist of one point. The main result of the work is as follows: suppose A is any closed set in R^n. There is an unresolvable rule at P for which $S(P) = A$.

1/1

Acc. Nr: AP0051918

Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 66-68

CHANGED ACTIVITY OF SOME HYDROLYTIC ENZYMES IN THE TISSUE CULTURE OF BONE MARROW MACROPHAGES DURING INTRACELLULAR PARASITIZING OF SALMONELLA TYPHOSA

F. L. Leyes, Yu. Ya. Tendetnik, O. Ye. Ryadnova, I. P. Kudinskaya

Central Research Institute of Epidemiology, Moscow

In protracted tests the fermentative reaction of reticulo-endothelial cells inoculated with typhoid bacilli was studied in a bone marrow tissue culture. Penetration of the causative agent into the cytoplasma of macrophages and other cells in the initial period of intracellular parasitism of the bacteria (1—2 days) was accompanied by the raised activity of lysosome enzymes — acid phosphatase and catepsine C, with subsequent fall of their activity and destruction of the lysosomes. The activity of cytoplasmatic enzymes — alisterase, aminopeptidase, alkaline phosphatase — was down already in the early phase of phagocytosis. In infected cells obtained in immune animals the activity of lysosome enzymes continued longer than in the cells taken in normal animals

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REEL/FRAME
19820401

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UDC 539.3:534.1

USSR

AGAPOV, V. I., KUDINOV, A. N., MERKULOV, L. I.

"Study of the Stability of Reinforced Shells Under the Effect of Nonuniforming Gentle Pressure"

V sb. Materialy z-y Nauch. konf. Tomsk. un-ta po mat. i mekh. Vyp. 2 (Materials of the Third Scientific Conference of Tomsk University for Mathematics and Engineering. Vyp. 2--collection of works), Tomsk, Tomsk University, 1973, p 107 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6V255)

Translation: An abstract is given of a paper in which a study was made of circular cylindrical shells reinforced with framing and loaded under external pressure which is not uniform with respect to the circle. The shell was considered as structurally orthotropic. The eccentricity of arrangement of the frames was taken into account. It was proposed that the shell material can be beyond the elastic limit. In this case the problem was solved on the basis of the theory of small elastic-plastic deformations. The initial state of the shell was considered momentless. The solution was compared with the experiment in which tests were run on 50 shells made of steels 3, 1Kh18N9 and duralumin D16AT. The effect of the nature of placement of the frames on the stability loss process and the magnitude of the critical pressure was estimated.

1/1

USSR UDC 621.791.756.011

CHERKASOV, N. N., ABRALOV, M. A., CULTANOV, U. T., and KUDINOV, A. V., Tashkent Polytechnical Institute

"Effect of Technological Factors on the Properties of VT-22 Weld Joints Produced by Electroslag Welding"

Tashkent, Izvestiya Akademii Nauk, Uzbek SSR--Seriya Tekhnicheskikh Nauk, No 6, 1972, pp 46-48

Abstract: Plates of titanium alloy VT-22 were welded by the electroslag welding process and heat treated at different temperatures to obtain the highest values of strength and ductility. From this work it was established that at 750 C the best values of impact strength for the seam metal, heat affected zone and base metal. The weld joint, when annealed at 800-850 C, was more ductile than after annealing at 750 C, but due to an inadmissible lowering of strength properties for both the seam and base metal, annealing above 750 C was not recommended.

The optimum welding process for VT-22 plates 30 and 60 mm thick was a welding current of 1200-1500 and 1800-2400 amp respectively at a welding voltage of 24-25 v and an argon consumption of 20-25 liter/min. 1 figure, 2 bibliographic references.

1/1

UDC 621.785.52:669.3

USSR

KVYATKOVSKIY, A. N., VDOVKIN, G. G., KUDINOV, B. V.

"Polarization of Vibrating Iron and Copper Electrodes in Sulfuric Acid Solutions of their Salts"

Sb. tr. N.-i. i proyekt. in-t po obogashch. rud tsvet. met. (Collected works of the Scientific Research and Planning and Design Institute with Respect to Beneficiation of Nonferrous Metal Ores), 1971, No 2, pp 64-73 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L320)

Translation: On the basis of the recorded polarization curves of the anode and cathode stages of the process of casehardening of copper in sulfuric acid solutions of natural salts on quiet and vibrating electrodes at 20-40 and 60° it was demonstrated that the electrode vibration lowers the concentration polarization of the cathode stage and has an insignificant effect on the variation of the anode polarization.

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UDC 669.71.053.24

USSR

KISELEV, V. A., MIRONOV, B. I., LEONT'YEV, L. I., KUDINOV, B. Z.

"Influence of Composition and Cooling Rate of Aluminum-Calcium Slag on Its Friability"

Tr. In-ta Metallurgii. Ural'sk. Fil. An SSSR [Works of Institute of Metallurgy, Urals Affiliate, Academy of Sciences, USSR], 1970, No. 22, pp. 34-40. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G128 by S. Krivonosova).

Translation: The friability of slags (III) improves with decreasing cooling rate and as the compositions of the III move away from the boundaries of the area of primary crystallization of $(CaO)_2 \cdot SiO_2$ and worsens with increasing Si-modulus. The most promising are III with Si-modulus <2.85-3, the compositions of which lie within or near the phase triangle $12CaO \cdot 7Al_2O_3$ -- $2CaO \cdot SiO_2$ -- $CaO \cdot Al_2O_3$. The cooling rate has less influence than chemical composition on the granulometric composition of slaked III. 2 figs; 2 tables.

1/1

UDC 669.295.046.44

USSR

UTKOV, V. A., KUDINOV, B. Z., YAKOVLEV, V. A., TRUNOV, G. Z., KASHIN, V. V., REMPEL', P. S.

"Dilatometry of Titanium-Vanadium Agglomerate"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSSR (Works of the Institute of Metallurgy. Urals Branch of the USSR Academy of Sciences), 1970, vyp. 22, pp 140-142 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G228)

Translation: The compositional and grain size characteristics of Kachkanarskiy concentrates determine its capacity for agglomeration. The ore has a high Fe content and low SiO_2 content. The ore composition is the following (in %): Fe 59.9, FeO 26.0, SiO_2 5.4, TaO 2.0, V_2O_5 0.66, TiO_2 3.3, MgO 2.6, S 0.044. The content of fractions in the concentrate is as follows (in %): +0.1 mm 23.3, +0.074 mm 15.7, -0.074 mm 61. This arises from the necessity for fine crushing of the ore. The temperature level of the sintering process is raised as a result of less development of the low-melting phases based on Ca, Si, and Fe oxides and also as a result of the presence of Ti and V oxides. The agglomerate is inclined toward crack formation as a result of internal stresses arising during cooling of the formed and hardened mass. There are 2 tables.

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UDC 669.71.053.4

USSR

KOZHEVNIKOV, G. N., KUDINOV, B. Z., LEONT'YEV, L. I., DUBOTOLKOV, G. P., KISELEV, V. A.

"Effect of Composition and Cooling Rate of Aluminum-Calcium Slags on Alumina Extraction"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSSR (Works of the Metallurgy Institute. Urals Branch of the USSR Academy of Sciences), 1970, vyp. 22, pp 41-45 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G130)

Translation: In order to obtain slags with high technological qualities it is necessary to realize the process of reduction of the initial raw material so that the slags will have the following characteristics: Si-modulus 1.5-3.0 and Ca-modulus 1.5-1.55. From these slags it is possible to extract more than 90% Al_2O_3 with soda leaching independently of the cooling rate of the slags.

There are 4 illustrations and 2 tables.

1/1

Powder Metallurgy

UDC 621.762:669.18.95

USSR

PALATNIK, L. S., KAGAN, YA. I., SHILOV, I. F., BELYAYEV, YU. I., BOGDANOVA, A. F., KOBYLEV, P. P., KOLESNIK, B. I., and KUDINOV, D. D., Khar'kov Polytechnic Institute imeni V. I. Lenin

"On the Micro- and Macroheterogeneity of the SAS-1 Alloy"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 22-28

Abstract: A study was made of the physical and chemical heterogeneity of the SAS-1 aluminum sintered alloy. The luminescence method of flaw detection using metallography was employed in the investigation of the physical heterogeneity of the alloy. The nature, dimensions and statistical distribution of pores appearing in the alloy in the process of its production and subsequent treatment were determined. The parameters of the luminescence method were corrected for the purpose of obtaining maximum sensitivity during the investigation of alloy microporosity. It was shown that with selected optimal conditions local pores with dimensions 10 x 15 x 25 μ m can be reliably detected. The problems of the appearance of chemical heterogeneity of the alloy in micro- and macrovolumes were considered. Assumptions are advanced whose realization will result in a decreased number of macro- and micro-flaws in the SAS-1 alloy.

1/1

UDC 51.801

USSR

KUDINOV, M. KH.

"Some Problems of Processing Speech Information by Man"

V sb. Mat. i inform. probl. prognozir. i upr. naukoy (Mathematical and Information Problems of Forecasting and Control of Science -- collection of works), Kiev, 1971, pp 331-342 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V704)

Translation: The experimental procedure is presented for determining the measure of reproducibility of a distorted text by man based on the assumption of the probability structure of the process of formation and reproduction of the text. The criterion of estimating the information processor (under noise conditions) reflecting the completeness of using the information available in the text is presented.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REGULARITIES IN THE DEVELOPMENT OF VIBRATION AND DISC AND WORK PIECE WAVINESS DURING INFEED GRINDING -U-

AUTHOR-(02)-KUDINOV, V.A., TODOROV, I.T.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 1-3

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL GRINDING, BIBLIOGRAPHY, VIBRATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0123256

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123256

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE STAGES OF WORK ARE INVESTIGATED CHARACTERIZING THE DEVELOPMENT OF VIBRATION AND WAVINESS OF DISC AND WORK PIECE DURING INFEED PRECISION GRINDING. CHANGES IN THE CIRCULAR VELOCITY OF THE DISC DURING THE GRINDING PROCESS DECREASES THE VIBRATION AMPLITUDE OF THE WORK PIECE AND WAVE HEIGHT 2.5-3 TIMES AND SURFACE FINISH FROM CLASSES 8B TO 9A. A RULE FOR THE OPTIMUM VARIATION IN DISC VELOCITY IN THE CUTTING PROCESS IS ESTABLISHED.

UNCLASSIFIED

USSR UDC: 535.31;535.8

KUDINOV, V. D.

"Application of Simplex Method in Aberration Correction of Optical Systems"

Tr. Mosk. Vyssh. Tekhn. Uch-Shcha Im N. E. Baumana [Works of Moscow Higher Technical School Imini N. E. Bauman], No. 135, 1970, pp 50-55, (Translated from Referativnyy Zhurnal Fizika, No. 8, 1970, Abstract #8D1241, unsigned).

Translation: The problem of aberration correction of systems consisting of thin components whose properties are described by the main parameters P, W, $\mathcal{W}$, and the chromatic parameter C is studied. This problem is reduced to a problem in linear programming, solved by a simplex method (see Zukhovitskiy, S. I., Avdeyeva, L. I., Lineynoye i Vypukloye Programmirovaniye [Linear and Convex Programming], Nauka Press, Moscow, 1967). As an example, results are presented from calculation of chromatic parameters of a six-component panoratic lens.

1/1

USSR

UDC 621.791.89

BEREZINA, N. V., SAENKO, M. I., ISHCHENKO, A. Ya., KUDINOV, V. M.

"Strengthening of Welded Joints in Aluminum Alloys by Explosive Processing"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 73, p 71.

Abstract: The influence of explosive processing was tested on joints of sheets 3 mm thick of AMg6N alloy with 40% cold working. The strength and yield point increased by 10-15 and 10-25% respectively. The impact toughness and bending angle was slightly lower, but significantly higher than the corresponding values for the base metal. When flat explosive charges are used with weights an order of magnitude greater than the weights of elongated charges such as plastic explosives, the yield point increases by 35-40%, but specimens are significantly deformed.

1/1

UDC 539.389.2:669.15

USSR

BEREZINA, N. V., DONUKIS, T. L., KUDINOV, V. M., TITOV, P. Y., and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Structural Changes in Steel Kh18N9T During Explosive Welding"

Kiev, Metallofizika, No 40, 1972, pp 49-53

Abstract: An investigation was made of the weld seam of a steel Kh18N9T-copper bimetal, produced by explosive welding with contact rates of 2.7 and 3.9 km/sec. Strengthening of the steel to a depth of 0.5 mm was detected in the seam zone, and the rolling texture disappears in this same layer. At the rate of 3.9 km/sec, 30% alpha-martensite formed in the steel in the seam zone. As x-ray diffraction analysis showed, the width of the interference lines of the alpha-martensite were small and considerably less than for the martensite obtained during cold working. This suggests that the martensite is found in a weakened condition apparently as the result of heat liberation. 3 figures, 1 table, 5 bibliographic references.

1/1

UDC 621.791.89

USSR

KUDINOV, V. M., and BUNYATYAN, A. KH.

"Hydrodynamic Modeling of Wave Formation Process in Explosive Welding of Metals"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 71, p 71

Abstract: For purposes of experimentally checking various hypotheses regarding the nature of the wave formation process in the zone of the joint in the explosive welding of metals, the authors staged experiments with a liquid according to the following scheme: A clear liquid was poured into a rectangular plastic cuvette. Running parallel to the base of the cuvette in special grooves with a small air gap was a thin metal plate, which could be freely pushed out of the cuvette through a slit in the butt wall. A layer of colored liquid was poured onto the plate. When the plate was pushed out at velocity v the upper layer of liquid moved down by gravity until fusing with the fixed layer of liquid. The gap between the layers and the moving speed of the plate were selected so that the fusion of the liquids occurred at a

USSR

KUDINOV, V. M., and BUNYATYAN, A. KH., Avtomaticheskaya Svarka, No 8, Aug 71, p 71

significant angle, the fusion point moving along the surface of the clear liquid at velocity v. This scheme was compared with the setup for the explosive welding of two parallel metal plates. The comparison indicates an analogy between the kinematics of the two processes, although their velocities differ by several orders.

A detailed description and discussion of the results will be given separately. The present article notes that the experiments confirmed the hypothesis of A. A. DERIBAS, V. M. KUDINOV, and F. I. MATVEYENKOV that wave formation is the result of alternate bulging of free surfaces near the contact point. It can also be regarded as established that the wave formation process is characteristic not only of the high-speed collision of metals, but is also possible in the fusion of two liquids at an angle. Hence the wave formation problem must be considered within the scope of the hydrodynamics of an incompressible fluid.

2/2

UDC: 518.5:681.3.06

USSR

KUDINOV, V. P.

"Generation of Pseudorandom Numbers With a Given Law of Distribution on a Digital Computer"

Sb. nauch. tr. N.-i. i proyektn. in-t po obogashch. i aglomer. rud chern. met. (Collected Scientific Works of the Scientific Research and Design Institute on Enrichment and Agglomeration of Ferrous Metal Ores), 1971, vyp. 12, pp 36-40 (from Zh-Kibernetika, No 7, Jul 71, Abstract No 7V763)

Translation: Programs for the "Ural-2" computer are developed for the formation of pseudorandom sequences of numbers with predetermined distribution, where a method is used which is based on an investigation of recurrent relations. The generation of pseudorandom numbers with predetermined distribution is usually based on formation of a sequence of numbers with uniform distribution in some interval (for instance (0,1)) followed by conversion of this sequence to a sequence distributed with respect to a predetermined law. In the construction of programs as a function of the formulation and requirements of a specific problem, the following methods of conversion were used: conversion by an inverse dis-

KUDINOV, V. P., Sb. nauch. tr. N.-i. i proyektn. in-t po obogashch. i aglomer. rud chern. met., 1971, vyp. 12, pp 36-40

tribution function; conversion by Neumann's approximate method; conversion based on piecewise approximation of distribution laws; conversion based on approximate modeling of the conditions of certain limit theorems. A qualitative estimate is given of the effectiveness of methods of conversion with respect to the speed of realization on a digital computer, and with respect to the accuracy of conversion of random quantities.
A. Doroshenko.

2/2

UDC: 519.24

USSR

KUDINOV, V. P.

"Digital Computer Conversion of Histograms for Empirical Distribution Laws"

Sb. nauch. tr. N.-i. i proyektn. in-t obogashch. i agglomer. rud chern. met. (Collected Scientific Works of the Scientific Research and Design Institute on Enrichment and Agglomeration of Ferrous Metal Ores), 1971, vyp. 12, pp 43-46 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7T150)

Translation: A method is outlined for converting a histogram with equal intervals to a histogram with equal areas. A schematic diagram of a conversion program for the "Promin'-M" digital computer is presented for this method. Ya. Shor.

1/1

USSR

UDC 535.8:535.24 1.13

GOPP, E. Ye., KUDINOV, V. P.

"A Luminous-Flux Modulator of the Tuning-Fork Type for a Star Follower"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 8, August 1970, pp 50-53

Abstract: A description is given of a simple luminous-flux modulator of the tuning-fork type, which provides a stable characteristic curve for a star follower with a large visual field and high sensitivity; the slope of the characteristic curve does not depend upon the brightness of the star, nor upon the diameter of its image, nor upon the dimensions of the visual field. The influence of an irregular background of light is decreased by a factor of several dozen. The procedure is given for determining the geometry of a modulator that will permit the required star-follower characteristic to be obtained. With such a modulator it is possible to obtain from the star-follower sensor unit a resolution measurable in tenths or even hundreds of an angular second with a linear zone of several seconds and a visual field of several dozen angular minutes. 2 figures, 1 bibliographic entry.

1/1

USSR

UDC 539.4

KOP'YEV, I. M., GEMINOV, V. N., KUDINOV, Y. V., GALKIN, YU. A., OVCHINSKIY, A. S., Moscow

"Testing of Composite Materials in Circular Specimens"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 120-122

Abstract: The possibility is demonstrated of using circular specimens for tensile testing of composite materials reinforced with wire (the matrix was pure aluminum and the armature was wire made from EP-322 steel). The peculiarities of the stress and strain states of the specimens are studied. Results of testing of circular and flat specimens are compared. Three figures, four bibliographs references.

1/1

USSR

UDC 539.216.2

GALKIN, YU. A., GUSEVA, N. P., DERGUNOVA, V. S., KONOKOTIN, V. V., KRAVETSKIY G. A., KUDINOV, V. V., AND SHORSHOROV, M. KH., Moscow,

"Interaction of Refractory Oxides with Graphite In Spraying"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 72, pp 94-99

Abstract: The interaction of refractory oxides with graphite in flame spraying was investigated in order to develop protective means against oxidation of carbographitic materials. The investigated dependences included the effect of base preheating on the bonding strength with the protective coatings and its density, effects of silicate and borosilicate sublayers on the bonding strength and the activation energy of the chemical interaction of sublayers with oxide coatings, the effect of graphite porosity on the bonding strength, and the effect of addition of molybdenum, silicon, and aluminum into the sprayed oxide on the gas density and the oxidative resistance of coatings. The kinetics of the increasing bond strength of Al_2O_3 and ZrO_2 coatings sprayed on preheated graphite are analyzed. The required activation energy of the graphite surface and its strong bond with the sprayed Al_2O_3 was found to be close to the half of the energy of the atomic bond in the graphite lattice.

1/2

USSR

GALKIN, YU. A., et al., Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 72, pp 94-99

which is in accordance withe graphite preheating over 1000°C when spraying. Silicate and borosilicate sublayers are recommended; they guarantee a bond strength of coatings on the level of graphite strength. Five illustrations, one table, three bibliographic references.

2/2

KUDINOV V.V.

Acc. Nr.: AP0046751 Ref. Code: UR01

UDC 621.791.947:621.387.143

USSR

KUDINOV, V. V., TARAN, V. D., BOCHENIN, V. I.

"Thermal Effect of a Plasma Arc on Metal"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 1-4
(from Avtomaticheskaya Svarka, No 1, 1970, p 79)

Translation: This article contains a study of the processes of propagation and equalization of heat in a solid metal cut by a plasma arc. There are 5 illustrations and a 4-entry bibliography.

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KUDINOV, V.V.

FEATURES OF PHYSICO-CHEMICAL PROCESSES FOR PLASMA PRODUCTION OF COMPOSITE MATERIALS

Moscow, Plazmennyye Protsessy v Metallurgii i Tekhnologii Neorganicheskikh Materialov, Nauka, 1973, pp 167-174

Plasma technology assists in the development of fundamentally new materials, the properties of which may exceed by more than one order of magnitude the properties of familiar and widely employed materials. The need for materials with unusual properties increased and is steadily increasing today in connection with the development of new industries, characterized by a rapid increase of operational loads, temperatures, environmental aggressiveness, etc. The requirements on refractoriness, heat resistance, rigidity and tensile strength of construction materials increase accordingly. The familiar methods of contemporary metallurgy and special processing methods often cannot provide a further improvement of the technical properties of materials, and the solution of this problem requires fundamentally new technological approaches.

Exceedingly high performance properties can be achieved by using two or more dissimilar components, combined in a single material. Such materials have come to be called composites [i. e.]. Our experience indicates that plasma technology in combination with blasting, hot extrusion at high pressures and using three-dimensional heat sources (see the diagram) by rolling, impregnation, sintering, etc., offers the greatest promises in the field of development of composition materials.

With the aid of plasma it is possible to grow monocrystalline whiskers, produce powders, fibers, apply protective and barrier coatings on them, etc. Plasma technology makes it possible to produce not only raw products, but also semifinished products that are required for the manufacture of composition materials. For this purpose the matrix material is applied by plasma spraying onto the raw fiber and the semi-finished product is made in the form of blank rolls (figure 1a) or finished products (figure 1b,c). Continuous or cut fiber in linear or [illegible] with packing may be dusted, depending on the nature of the raw material.

KUDINOV, V.V.

SPRAY APPLICATION OF COATINGS

Article by V. V. Kudinov, Moscow, Plazmennye Protsessy v Metallurgii i Tekhnologii Neorganicheskikh Materialov, Nauka, 1977, pp 144-147

Range of Application

Spray applications of coatings in one of the most developed plasma processes at the present time. Its industrial application is characterized not only by a large volume of operations, but also by an extensive range of materials that can be sprayed. Plasma spraying is employed extensively in a great variety of industries (Table 1).

Table 1. Areas of Application of Plasma Coatings for Which Positive Results are Obtained or Anticipated

Range of Application	Product	Purpose of Coating	Coating Material
Rocket technology	Nose cones and nozzles of rockets	Heat Resistance	Al_2O_3; ZrO_2
Space Vehicles	Bearings of missiles, space exploration vehicles	Heat Resistance Heat Insulation Heat resistance	W ZrO_2 Al_2O_3; ZrO_2; W
		Heat insulation and thermal radiation properties	Metals and finely dispersed powders of oxides, carbides and silicides
Aviation	Connectors and turbine and jet engine compressor blades	Erosion resistance	Co-WC; TiC Cr_3C_2; Ni-Al Ni-Cr-B-Si
	Gas turbine blades	Heat resistance	Al-Ni; Al; Al_2O_3

JPRS 61371, 26 Feb. 74

THERMOPHYSICS OF PLASMA METAL SPRAYING, FACING, CUTTING AND SPHEROIDIZE ANNEALING

[Article by N. N. Rykalin, Yu. D. Kulagin, M. Kh. Shorshorov, V. V. Kudinov, Yu. L. Krasulin, V. A. Petrunichev and A. A. Uglov, Moscow, Plazmennyye Protsessy v Metallurgii i Tekhnologii Neorganicheskikh Materialov, Russian, 1973, pp 56-84]

Introduction

The development of the technique of generating low-temperature plasma placed in the hands of technologists an extremely flexible tool, in terms of thermal properties, for processing solids. Plasma heating quickly found application for cutting, coating, melting, welding, spheroidize annealing of powders and for other purposes. The range of application of low-temperature plasma for research and industrial purposes continues to expand apace.

The primary problems that are solved during plasma processes are those that involve interaction of plasma with a solid. These include local heating, melting of the base and applied metal, directional removal of molten metal from a cut, or melting, spraying and acceleration of particles by the plasma during the application of coatings. The specific power which modern technological plasmatrons are capable of developing on a solid surface is 10^5-10^6 W/cm² during plasma arc processing and 10^3-10^4 W/cm² during plasma jet processes. The specific power of the plasma jet may be decreased virtually without bound, depending on the requirements of the process, and can be spread over a large area, insuring "soft", uniform heating of a surface. This property of the plasma jet is used for melting and metal spray coating.

Most plasma treatment processes, even with the highest concentration of energy, may be described on the basis of the theory of concentrated heat sources, developed by N. N. Rykalin [1].

Certain aspects of thermal physics of the most commonly used plasma processes and ways of controlling them are discussed in the article.

KUDINOV, V.V.

USSR

UDC 669.71:539.4

RYKALIN, N. N., SHORSHOROV, M. KH., KUDINOV, V. V., and GALKIN, YU. A., Moscow

"Some Means of Producing Reinforced-Fiber Composite"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 73, pp 98-103

Abstract: The basic theoretical premises [illegible] possibility of producing composites by the method of spraying a matrix [illegible] fibers are discussed from the positions of the physical and chemical processes of joining materials from which the following problems must be solved to accomplish the process: 1) strong joining of fiber and matrix by chemical bonds between them; 2) minimum development of diffusion processes and the absence of new-phase formation between matrix and fibers; 3) maximum preservation of fiber strength; 4) uniform distribution of a given amount of fiber throughout the entire matrix volume; and 5) compaction and strengthening of the matrix with the fibers without damage to the fibers. In this work an aluminum matrix was plasma sprayed onto EP322 steel fibers and it was determined that the bonding strength of the Al-EP322 composite increased with decreased fiber diameter, which in turn reduces the critical length of the 1/2

USSR

KYKALIN, N. N., et al., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 73, pp 98-103

fiber and makes it possible to obtain the same high level of strength at diminished temperature of fiber preheating in comparison with large-diameter fibers. It was also found that the strength of the plasma-sprayed composite is directly proportional to the volume fraction of fiber in the composite. Two figures, two tables, and ten bibliographic references.

2/2

USSR

UDC 621.791.947.55.669.71:662.614

KUDINOV, V. V., Candidate of Technical Sciences (Institute of Metallurgy im. A. A. Baykov), TARAN, V. D., Doctor of Technical Sciences (Deceased), BOCHENIN, V. I., Engineer (Moscow Institute of the Petrochemical and Gas Industry)

"Energy Balance of the Plasma Arc in Aluminum Cutting"

Moscow, Svarochnoye Proizvodstvo, No 6, Jun 70, pp 6-7.

Abstract: The energy balance of a plasma arc in cutting A99 aluminum (20 mm thick) was determined on the basis of calorimetric measurements and calculations of heat propagation in the solid metal. An increase in the arc energy produced a redistribution of the effective heat energy received by the metal. The amount of energy consumed in the melting of the metal increased from 15 to 40%, while the heat absorbed by the solid metal decreased from 60 to 40%. The parameters of the cutting conditions strongly affected the arc efficiency. The efficiency coefficient η_u increased from 70 to 80% with increasing arc energy, while the $\eta_t = q_1/N$ coefficient, where q_1 is the thermal energy absorbed by the solid metal and N is the arc power, decreased to a minimum value (40%). The reduction in cutting rate under the optimum value led to unproductive losses in overheating the melted metal. The energy level q_1/G necessary for evacuating 1/g of metal from the cutting region was constant and did not depend on cutting productivity.

1/1

UDC 669.15-194.55:621.791

USSR

SHORSHOROV, M. KH., ANTIPOV, V. I., KUDINOV, YE. D., and MIKHALEVA, E. I., Institute of Metallurgy imeni A. A. Baykov

"Effect of Welding Thermal Cycle on Structure and Phase Composition of Heat-Affected Metal in Maraging Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1973, pp 62-63

Abstract: A study was made of the effect of the heating and cooling rate during welding on the structure and phase composition of maraging steels of the type 18 Ni—8 Co—3 Mo—Ti and 14 Ni—4 Cr—3 Mo—Ti. It was found that an increase in the grain size during welding is determined by the cooling rate for the metal and how long the metal remains at temperatures above the critical thermal points. Cooling of the metal from $\alpha \rightarrow \gamma$ transformation temperatures at a slow rate contributes to an increase in the amount of remaining austenite and to a certain reduction in the hardness of the heat-affected metal. I. I. PROKHOROVA took part in the work.

1/1

USSR

UDC 621.791.053.011:669-15-194:55 + 669.25 + 669.28 + 669.295

KUDINOV, YE. D., Engineer, PROKHOROV, P. A., Candidate of Technical Sciences, ARISTOV, V. S., Candidate of Technical Sciences, and SERBIN, N. G., Engineer

"Effect of Cobalt, Molybdenum, Titanium, and Chromium on Properties of Maraging Weld Metal"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 22-23

Abstract: The authors studied the effect of cobalt, molybdenum, titanium, and chromium on the mechanical properties and structure of the weld metal in the welding of maraging steels ON18Kh8M5T and ON14Kh5M3T. The study specimens were prepared from 500 x 500 x 32 mm welded billets. Butt welds with a double-V symmetric groove were welded by manual argon-arc nonconsumable-electrode welding. The mechanical properties of the weld metal were determined after precipitation hardening of the specimens. The results indicate the following optimum contents for the weld metal: 5-7 percent cobalt, 2.5-3.5 percent molybdenum, 0.25-0.35 percent titanium, and 2.3-4.2 percent chromium.

1/1

USSR

UDC: 621.372.358.2

IL'CHENKO, M. Ye. and KUDINOV, Ye. V.

"Threshold Ferrite Resonator Power in a UHF Transmission Line"

Kiev, Izvestiya VUZ--Radioelektronika, Vol. 14, No. 1, 1971, pp 118-120

Abstract: This brief communication presents experimentally validated formulas for the threshold power level at which unstable effects arise in a ferrite resonator connected with a uhf transmission line. Curves are plotted for the threshold power as a function of the distance between the resonator and the short-circuiting plane as computed from a formula given in the communication. Also given are curves comparing the theoretical and experimental threshold power with the resonator shifted along the short-circuited coaxial line. The experimental values for this curve were obtained from a ZhIG resonator with a cavity volume of 2.03 mm^3 and a magnetic susceptibility of 1250, and from a second resonator with a volume of 6.4 mm^3 and a susceptibility of 1170. Agreement between the values is close.

1/1

USSR

KUDINOVA, M. Kh.

"Experiment Studying the Solution of Verbal Problems by Man Under Difficult Conditions"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 81-90 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V828).

Translation: The process of understanding of partially distorted text is studied and a mathematical model of the process of work on the information of the text by man is constructed. The influence of the degree of distortion and the difficulty of the text on the measure of information processing is clarified.

1/1

/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70
TLE--SOME CHARACTERISTICS OF SENSORY AFTERDISCHARGE OF HUMAN BRAIN TO PHOTIC STIMULATION -U-
ITHOR--KUDINOVA, M.P., MYSLOBODSKIY, M.S.

UNTRY OF INFO--USSR

URCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 1, PP 89-94
TE PUBLISHED--------70

UBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

PIC TAGS--BRAIN, SENSORY PHYSIOLOGY, SLEEP, EYE

ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED
ROXY REEL/FRAME--1982/0811 STEP NO--UR/0247/70/020/001/0089/0094

IRC ACCESSION NO--AP0052247

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620008-0"

2/2 025 UNCLASSIFIED PROCESSING DATE--11SEP70

IRC ACCESSION NO--AP0052247

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY MEANS OF AVERAGING EVOKED POTENTIALS A STUDY WAS MADE ON HEALTHY SUBJECTS OF THE TOPOGRAPHY OF THE SENSORY ALPHA AFTERDISCHARGE AND ITS DYNAMICS CAUSED BY CHANGES IN THE DIRECTION OF ATTENTION AND BY FALLING ASLEEP. IT HAS BEEN SHOWN THAT THE AMPLITUDE OF THE SENSORY AFTERDISCHARGE DEPENDS ON THE POSITION OF THE EYES AND THAT ITS EXALTATION OURING VOLUNTARY MOVEMENTS IS RELATED TO EXCURSIONS OF THE EYES. THE SIGNIFICANCE OF THE ALPHA DISCHARGE IS DISCUSSED AS AN INDICATOR OF DIRECTION OF ATTENTION AND THE STATE OF CONSCIOUSNESS.

1/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--OXIDATION OF ORGANIC COMPOUNDS. 65. SYNTHESIS OF HALOGENATED TEREPHTHALONITRILES -U-

AUTHOR-(03)-BUKEIKHANOV, N.K., KUDINOVA, V.S., SUVOROV, B.V.

COUNTRY OF INFO--USSR

SOURCE--TR. INST. KHIM. NAUK, AKAD. NAUK KAZ. SSR 1970, 28, 49-61

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED AROMATIC COMPOUND, BROMINATED ORGANIC COMPOUND, IODINATED ORGANIC COMPOUND, XYLENE, ORGANIC NITRILE COMPOUND, TEREPHTHALIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1127 STEP NO--UR/0000/70/028/000/0049/0061

CIRC ACCESSION NO--AT0134813

UNCLASSIFIED

CIRC ACCESSION NO--AT0134613

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF TEMP., REACTION TIME, AND REACTANT RATIO ON THE OXIDATIVE AMMONOLYSIS OF 2,CHLORO, 2,5,DICHLORO, 2,3,5,6,TETRACHLORO, 2.BROMO, 2,5,DIBROMO, 2,IODO, AND 2,5,DIIODO,P,XYLENE WERE STUDIED IN THE PRESENCE OF FUSED SN VANADATE. THE OXIDATIVE AMMONOLYSIS OF HALOGENATED P,XYLENES GAVE HALOGENATED TEREPHTHALONITRILES (I) IN 85-90PERCENT YIELD. ALK. HYDROLYSIS OF I GAVE THE CORRESPONDING HALOGENATED DERIVES. OF TEREPHTHALIC ACID. OPTIMUM REACTION CONDITIONS WERE DETD.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201620008-0"

USSR

UDC 547.26'118

FOSS, V. L., VEYTS, YU. A., KUDINOVA, V. V., BORISENKO, A. A., and LUTSENKO, I. F., Moscow State University Imeni M. V. Lomonosov

"Synthesis of Alkylalkoxydiphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1000-1006

Abstract: The synthesis of a new type of unsymmetric diphosphines containing alkyl(aryl) and alkoxy(aryloxy) groups was developed. The first method is based on the reaction of dialkoxyphosphines with dialkylchlorophosphines in organic solvents (petroleum ether, benzene, diethyl ether, dimethoxyethane) and in presence of tertiary amines. This is an exothermic reaction, completed in 2-3 hrs. The second method is much slower, requiring several days for completion. It is based on the reaction of dialkyl(aryl)phosphines with dialkyl-(aryl) chlorophosphites under similar reaction conditions. Raising the reaction temperature does not help, since it leads to the formation of high-boiling by-products.

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Welding

USSR

UDC 621.791.052:678-1:669.017.1.74

RYAZANTSEV, V. I., PUGACHEV, A. I., SMIRNOVA, Ye. I., ILYUSHIN, A. A., KUDISHINA, T. A., and OSOKINA, T. N.

"Chemical Microheterogeneity of Welded Joints of VMD8 Magnesium Alloy"

Moscow, Svarochnoye Proizvodstvo , No 10, Oct 72, pp 8-10.

Abstract: The mechanism of formation of microchemical heterogeneity of VMD8 alloy welded joints through the cross section is studied as a function of the chemical composition of the welding wire. It is shown that the degree of microchemical heterogeneity and the nature of its placement have a decisive influence on the hot shortness of the joint metal. Microchemical heterogeneity in the fusion zone and in the near-seam zone arises as a result of diffusion redistribution of elements from the seam into the surrounding zone (Ce for 5-8 wire) and from the surrounding zone into the seam (Zn for type 5-7 wire), as well as diffusion enrichment of melted boundaries with such elements as Ce and impoverishment of the grain areas near the boundary in these elements. It is established that when welding is performed with wires in the system Mg-Al-Zn-Mn, the distribution of alloying elements in the fusion zone is such that no change in the composition of the wire can cause a reduction in hot shortness (Δ = 0.3 mm/min).

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USSR

RYAZANTSEV, V. I., PUGACHEV, A. I., SMIRNOVA, Ye. I., BLYABLIN, A. A., KUDISHINA, T. A., OSOKINA, T. N., Moscow, Svarochnoye Proizvodstvo No 10, Oct 72, pp 8-10.

For welding wire in the Mg-Zn-Zr-Ce system, an increase in Ce content to 3.7% or more causes a sharp increase in diffusion penetration of this element from the seam into the surrounding zone, significantly increasing resistance to the formation of hot cracks ($A \geq 0.6$ mm/min).

2/2

USSR UDC: 620.178.38

MAKSIMOVICH, G. G., DROZD, N. P., YANCHISHIN, F. P., and KUDLAK, S. M.,
Institute of Physico Mechanics, Academy of Sciences Ukrainian SSR, L'vov

"Effect of Vacuum on the Structure and Certain Mechanical Characteristics of 08kp Steel"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, No 2, 1971, pp 115-118

Abstract: Results are presented of a study of the effect of a vacuum of 10^{-6}, 10^{-5}, and 10^{-3} torr on the structure, hardness, and ductility of 08kp steel subjected to long-term loading at high temperatures (400, 600, and 800° C). The experiments showed that at high temperatures, the ductility of specimens tested under identical conditions at 10^{-6} torr was somewhat greater than at 10^{-3} torr. The hardness of the specimens which did not rupture during the 500 hours of the test at high temperatures under a vacuum of 10^{-6} torr was less than the hardness of specimens tested under the same conditions at 10^{-3} torr. The long-term strength of specimens at high temperatures and 10^{-6} torr decreases similarly. The increased ductility of specimens at high temperatures and high vacuum is explained by the less intensive process of oxidation of specimens. The higher values of hardness and long-term strength at the lower vacuum may result from more significant oxidation of the surface layers of the metal than at 10^{-6} torr.

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Acc. Nr: AP0036814

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, Immunobiologii, 1970, Nr 1, pp 43-49

INTERSPECIES EXCHANGE OF COLICINOGENIC FACTORS IN ENTEROBACTERIA IN VIVO

Kudlay, D. G.; Petrovskaya, V. G.; Kiselev, R. N.

Possibility of interspecies exchange of colicinogenic factors in enterobacteria (in the intestine of mice) was experimentally demonstrated between Shigellae and Escherichia and Salmonellae. When S. typhimurium cultures (natural for mice) were used there was seen a prolonged circulation of the originating colicinogenic variants, which were also isolated, along with the initial recipient strain, from the blood and organs of perished animals.

The possibility of genetic exchange of cholicinogenic factors in enterobacteria under natural conditions should be taken into consideration in analyzing and assessing the epidemiological materials of the outbreaks of intestinal diseases with utilization of colicinogenicity and colicinosensitivity as genetic labels.

D/E.

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Biophysics

UDC 576.343

USSR

BIRYUKOV, V. I., BORUNOVA, S. P., GOL'DFEL'D, M. G., ZHUKOVA, I. G., [illegible], D. G., KUZNETSOV, A. N., SHAPIRO, A. B., and OSTROVSKIY, D. [illegible], Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow, Institute of Chemical Physics, Academy of Sciences USSR, Moscow, and Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Moscow

"Investigation of Structural Transformations in Biomembranes by Means of the Spin- Probe Method: Temperature-Induced Changes in Bacterial Membranes"

Moscow, Biokhimiya, Vol 36, No 6, Nov/ Dec 71, pp 1149-1155

Abstract: To investigate changes induced in bacterial membranes by temperature changes within a physiological range, isolated and sonic-disintegrated membranes of M. lysodeikticus and E. coli were mixed and incubated with the free iminoxyl radicals 1,1,3,3,7-pentamethyl-7,8-benzo-1,2,3,4-tetrahydropyrrolo-(3,4-b)-indol-2-oxyl (I) and 2,2,6,6-tetramethyl-4-oxopiperidin-1-oxyl (II) [illegible] as indicators of structural changes. Compound I was incorporated in the protein fraction and compound II in the lipid fraction of the membranes. [illegible]

USSR

BINYUKOV, V. I., et al., Biokhimiya, Vol 36, No 6, Nov/Dec 71, pp 1149-1155

temperatures suggest that high temperature induces conformational transformations in the protein fraction, and these induce structural transformations in the lipid fraction of bacterial membranes.

USSR

KUDLAYEV, E. M.

"A Certain Class of Nonparametric Statistics"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te [Works of Siberian Institute of Physics and Technology of Tomsk University], 1973, No 65, pp 82-95 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V166 by the author)

Translation: For each of the problems of matching and comparison of two samples, the probability spaces $(\Omega,\mathfrak{B},P_1)$ and $(\Omega,\mathfrak{B},P_2)$ are introduced naturally, as well as certain classes $\mathcal{K}\subset\mathfrak{B}$. The use of the "variation distance" in $\mathcal{K}$ between P_1 and P_2: $\rho_{\mathcal{K}}(P_1,P_2)=\sup_{B\in\mathcal{K}}|P_1(B)-P_2(B)|$ leads to the following statistics: Sherman, Kolmogorov, "Empty Boxes," Kolmogorov-Smirnov, "Empty Blocks," series, Wilcoxon, as well as certain others, the limiting distributions of which are written for the null hypothesis.

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USSR

KUDLAYEV, E. M.

"Nonparametric Statistics Constructed on the Basis of Sections of a Variation Series"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te [Works of Siberian Institute of Physics and Technology of Tomsk University], 1973, No 63, pp 82-93 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V165 by the author)

Translation: Suppose of an entire variation series $X_n(1)$, $X_n(2)$,..., $X_n(n)$, we know the values only of the sectors $X_n(k_{2r-1})$, $X_n(k_{r-1}+1)$, ..., $X_n(k_{2r})$; r=1,...,l. These sectors are used to construct Sherman, Kolmogorov and Whitworth statistics and write their distributions for the two limiting situations:

a) $\lim_{n\to\infty} k_r/(n+1)=\lim k_{2r}/(n+1,\ldots,21$, $0<p_1<\ldots<p_{2l}<1$;

b) $\lim_{n\to\infty} k_{2r-1}/(n+1)-\lim k_{2r}/(n+1)=p_r$, r=1,...,l, but $\lim_{n\to\infty} (k_{2r}-k_{2r-1})=$ and $0<p_l<\ldots<p_1<1$.